B336 Advanced Internet Computing

Writing Wireless Applications with WAP (3)

Learning Objectives

- With WML -
- Study client-side templates
- Study the use of form data
- Study the inclusion of images

WML: Client-side Templates

- We want to minimise the traffic sent across the wireless link from WAP gateway to handheld
- Often cards full of information looked up from the server need to be presented in a standard form
- So it could be worth setting up presentation templates inside the handheld with variables that can be filled in
- This is done by including a card that does the formatting with variables for that incoming data
- Then only the minimum data needs to be transmitted

WML: Client-side Templates

```
<card id="author" title="Author search" newcontext="true">
  <p mode="nowrap">
   <fieldset>
          First name:
          <input name="fname" type="text" title="Enter name"/>
   </fieldset>
   <fieldset>
          Last name:
          <input name="lname" type="text" title="Enter name"/>
   </fieldset>
   <anchor>Done
       <go method="post" href="search">
           <postfield name="type" value="bio" />
           <postfield name="fname" value="$fname" />
           <postfield name="lname" value="$lname" />
       </go>
   </anchor>
</card>

<card id="bio" title="Biography">
  <p mode="nowrap">
  <a href="#main">Done</a>
  $(bio)
  </p>
<card>
```

this card contains formatting information for the results of all biographical searches

will display answers from a particular biographical lookup based on the name which was input above

WML: Client-side Templates

- Information looked up from a database on the server is now sent as a minimal card…

```
<card newcontext="true">
  <onevent type="onenterforward">
    <go href="main.wml#bio">
      <setvar name="bio" value="Peter Filmore is a contractor to Vodaphone
            and has served as a representative in recent WAP forum meetings" />
    </go>
  </onevent>
<card>
```

… which transfers its information to the standard format card that serves as a template. The Biography card will then essentially become:

```
<card id="bio" title="Biography">
  <p mode="nowrap">
  <a href="#main">Done</a>
   Peter Filmore is a contractor to Vodaphone and has served
   as a representative in recent WAP forum meetings
  </p>
<card>
```

WML: Form data

- HTML form elements <input>, <select>, <option>, <optgroup> and <fieldset> are in WML and work the same way

- But remember that <postfield> is used to submit data to server & <go> is used instead of <form>

- Form attributes in WML are slightly different from HTML

WML: Form data

Form fields

Element	Attributes
<select>	title
	name
	value
	iname
	ivalue
	multiple={true|false}
	tabindex
<input>	name
	type={text|password}
	value
	format
	emptyok={true|false}
	size
	maxlength
	tabindex
	title

Form fields

Element	Attributes
<option>	value
	title
	onpick
<optgroup>	title
<fieldset>	title

WML: The <input> element

- <input> validation is helped by the emptyok attribute, which specifies if a value for this input is required or not (emptyok="false" means required)
- format attribute of <input> specifies the expected form of input data
- For example, if the user is required to type in a telephone number of the form 12345-123, the following format attribute would be used:

```
Name<input name="N" format="NNNNN\-3N" type="text" title="Enter name" />
```

- Codes for the format attribute are as follows

WML: The <input> element

Value	Description
A	Enter any upper-case alphabetic or puctuation character (upper-case non-numeric character)
a	Enter any lower-case alphabetic or puctuation character (lower-case non-numeric character)
N	Enter any numeric character
X	Enter any upper-case character
x	Enter any lower-case character
M	Enter any character; user agent might assume that the character is upper-case, but must allow for any char
m	Enter any character; user agent might assume that the character is lower-case, but must allow for any char
*f	Enter any number of characters: f is one of the above format codes. May appear only once, at the end of the format string
nf	Enter up to n characters (n is 1-9): f is one of the above format codes. May appear only once, at the end of the format string
\c	Display the next character, c, in entry field; allows escaping of the format codes as well as introducing non-formatting characters so that they can be displayed in the entry area.

WML: The <select> element

```
<card id="title" title="Title search" newcontext="true">
 <p mode="nowrap">
  <fieldset>
   Word in title:
   <input name="title" type="text" title="Enter title" />
  </fieldset>
  <fieldset>
   Category:
   <select name="cat" title="Select cat." />
    <option value="none">-none-</option>
    <option value="crime">Crime</option>
    <option value="romance">Romance</option>
    <option value="thrill">Thriller</option>
    <option value="SF">SciFi</option>
    <option value="comp">Computers</option>
    <option value="selfhelp">SelfHelp</option>
   </select>
   </fieldset>
  <anchor>Done
      <go method="post" href="search">
        <postfield name="type" value="books" />
        <postfield name="title" value="$title" />
        <postfield name="cat" value="$cat" />
      </go>
  </anchor>
 </p>
</card>
```

<select> assigns value to variable cat depending on the option chosen

WML: Images

- WAP browsers support simple bitmapped images (!)
- The WBMP specification is available from the WAP forum website, but hidden in a document called "WAE Specification".
- Some browsers support GIFs, but don't count on it
- <img> element is similar to use in HTML, except for the localsrc attribute which includes images stored locally in the handheld:

```
<img localsrc="book" alt="A book" src="/images/book.wbmp"/>
```

- This includes local image of a book, if there, otherwise it fetches the image from the server

WML: Images

Form fields

Element	Attributes
<img>	alt
	src
	localsrc
	vspace
	hspace
	align
	height
	width

- Names of local images are not specified by WAP, but are a present proprietory.
- Likely to be some standardisation in future

References

Anderson, et.al. *Professional XML*. Wrox Press, 2000. Chapter 14.

And see

WAP Forum at http://www.wapforum.org